

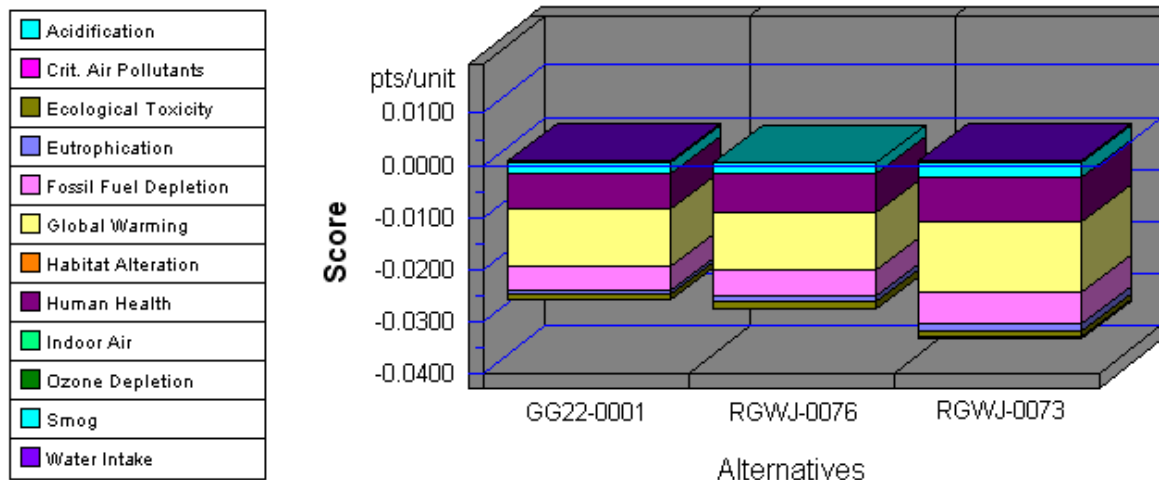
BEES Results: Fuel Conditioners**Units: 1000 ton-miles driven in a truck¹**

BioPreferred ID# GG22-0001

BioPreferred ID# RGWJ-0076

BioPreferred ID# RGWJ-0073

Environmental Performance

**Note: Lower values are better**

Category	GG22-0001	RGWJ-0076	RGWJ-0073
Acidification--3%	0.0000	0.0000	0.0000
Crit. Air Pollutants--9%	-0.0002	-0.0002	-0.0003
Ecolog. Toxicity--7%	-0.0010	-0.0014	-0.0013
Eutrophication--6%	-0.0007	-0.0008	-0.0012
Fossil Fuel Depl.--10%	-0.0047	-0.0052	-0.0059
Global Warming--29%	-0.0107	-0.0108	-0.0136
Habitat Alteration--6%	0.0000	0.0000	0.0000
Human Health--13%	-0.0068	-0.0076	-0.0086
Indoor Air--3%	0.0000	0.0000	0.0000
Ozone Depletion--2%	0.0000	0.0000	0.0000
Smog--4%	-0.0023	-0.0022	-0.0029
Water Intake--8%	0.0002	0.0000	0.0001
Sum	-0.0262	-0.0282	-0.0337

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Note on use phase of this item's life cycle: Without a fuel conditioner, 1000 ton-miles requires 10.5 gallons of fuel. However, with a fuel conditioner, 1000 ton-miles means less fuel needed overall (better fuel efficiency). The use phase (of using a fuel conditioner) has been calculated in relation to *not* using conditioner. As a result, the BEES environmental and economic performance scores are negative values for this item's products.

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Fuel Conditioners				
Impacts	Units	GG22-0001	RGWJ-0076	RGWJ-0073
Acidification	millimoles H ⁺ equivalents	-3.11E+03	-2.84E+03	-3.99E+03
Criteria Air Polutants	microDALYs	-4.40E-01	-3.83E-01	-5.62E-01
Ecotoxicity	g 2,4-D equivalents	-1.18E+01	-1.65E+01	-1.56E+01
Eutrophication	g N equivalents	-2.35E+00	-2.60E+00	-3.77E+00
Fossil Fuel Depletion	MJ surplus energy	-1.64E+01	-1.83E+01	-2.09E+01
Global Warming	g CO ₂ equivalents	-9.44E+03	-9.50E+03	-1.20E+04
Habitat Alteration	T&E count	0.00E+00	0.00E+00	0.00E+00
Human Health--Cancer	g C ₆ H ₆ equivalents	-4.37E+00	-4.87E+00	-5.56E+00
Human Health--NonCancer	g C ₇ H ₈ equivalents	-3.16E+03	-3.52E+03	-4.02E+03
Indoor Air Quality	g TVOCs	0.00E+00	0.00E+00	0.00E+00
Ozone Depletion	g CFC-11 equivalents	-3.79E-07	-4.18E-07	-4.81E-07
Smog	g NO _x equivalents	-8.59E+01	-8.21E+01	-1.09E+02
Water Intake	liters of water	1.20E+01	3.22E+00	4.01E+00
Functional Unit	-----	1000 ton-miles driven in a truck		
1 Following are more complete descriptions of units: Acidification: millimoles of hydrogen ion equivalents; Criteria Air Pollutants: micro Disability-Adjusted Life Years; Ecological Toxicity: grams of 2,4-dichlorophenoxy-acetic acid equivalents; Eutrophication: grams of nitrogen equivalents; Fossil Fuel Depletion: megajoules of surplus energy; Global Warming: grams of carbon dioxide equivalents; Habitat Alteration: threatened and endangered species count; Human Health-Cancer: grams of benzene equivalents; Human Health-NonCancer: grams of toluene equivalents; Indoor Air Quality: grams of Total Volatile Organic Compounds; Ozone Depletion: grams of chloroflourocarbon-11 equivalents; Smog: grams of nitrogen oxide equivalents; and Water Intake: liters of water.				

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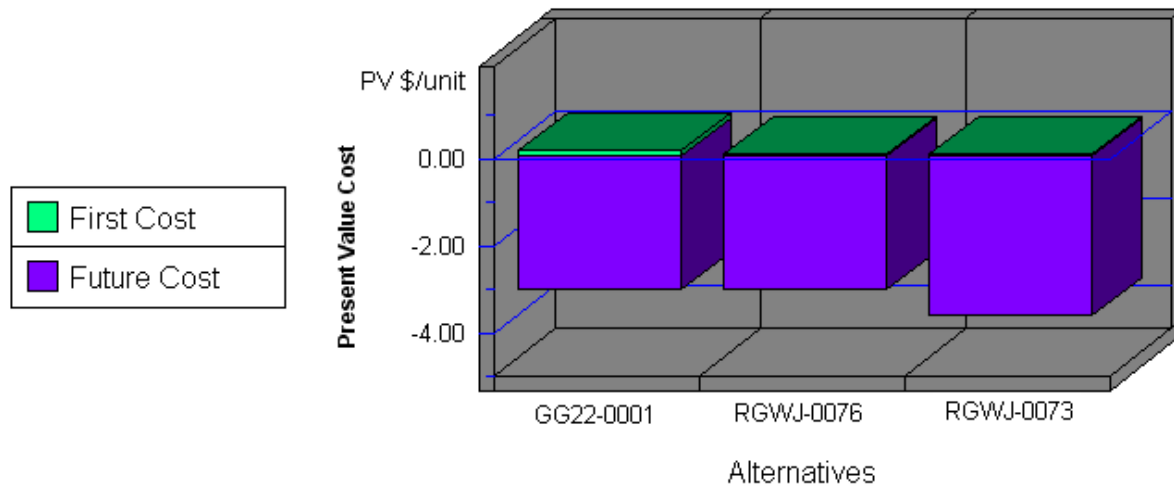
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Economic Performance



Category	GG22-0001	RGWJ-0076	RGWJ-0073
First Cost	0.11	0.03	0.03
Future Cost-- 3.0%	-3.06	-3.06	-3.67
Sum	-2.95	-3.03	-3.64

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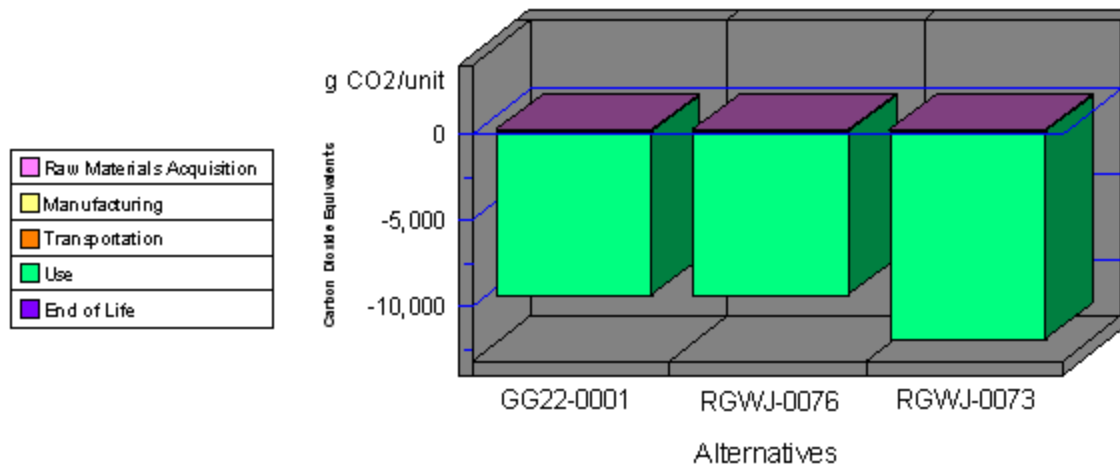
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Global Warming by Life-Cycle Stage**Note: Lower values are better**

Category	GG22-0001	RGWJ-0076	RGWJ-0073
1. Raw Materials	32	15	11
2. Manufacturing	0	1	0
3. Transportation	3	2	2
4. Use	-9477	-9518	-12020
5. End of Life	0	0	0
Sum	-9442	-9500	-12007

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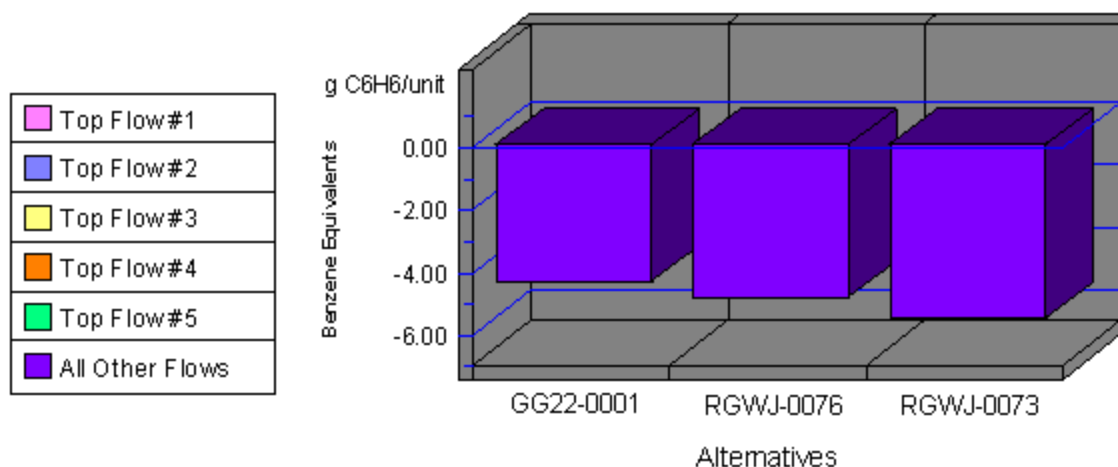
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Human Health Cancer by Sorted Flows***Note: Lower values are better**

Category	GG22-0001	RGWJ-0076	RGWJ-0073
Cancer-(w) Formaldehyde	0.00	0.00	0.00
Cancer-(a) Ethylene Oxide (C2H	0.00	0.00	0.00
Cancer-(w) Dichloroethane (1,2	0.00	0.00	0.00
Cancer-(a) Ethoprop	0.00	0.00	0.00
Cancer-(a) Vinyl Chloride (CH2	0.00	0.00	0.00
All Others	-4.37	-4.87	-5.56
Sum	-4.37	-4.87	-5.56

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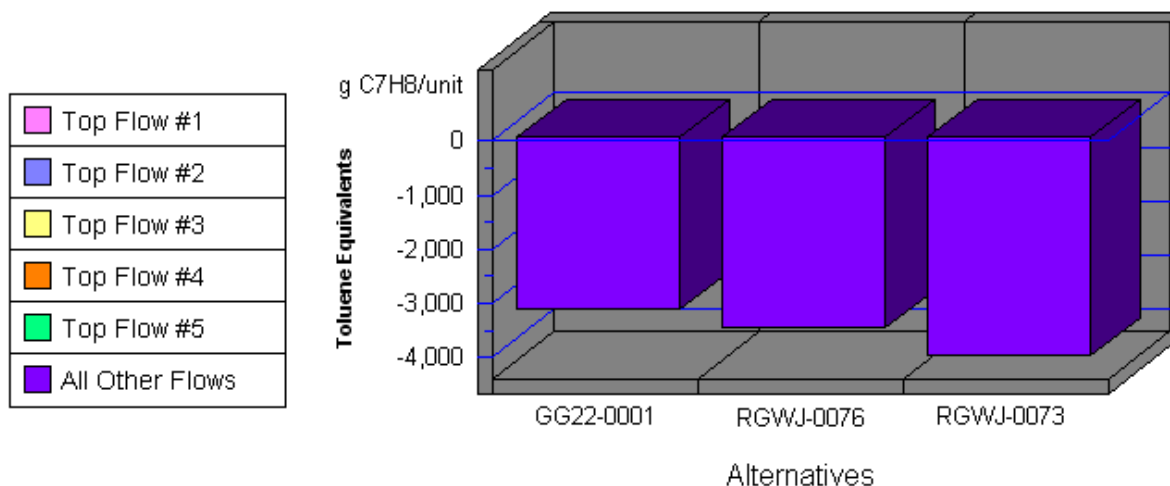
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Human Health Noncancer by Sorted Flows***Note: Lower values are better**

Category	GG22-0001	RGWJ-0076	RGWJ-0073
Noncancer--(a) Ammonia (NH3)	0.60	0.01	0.05
Noncancer--(a) Trifluralin (C13	0.23	0.06	0.08
Noncancer--(a) Aluminum (Al)	0.11	0.00	0.00
Noncancer--(a) Methyl Parathion	0.05	0.01	0.02
Noncancer--(a) Carbofuran (C12H	0.04	0.01	0.01
All Others	-3,164.43	-3,516.99	-4,019.00
Sum	-3,163.40	-3,516.90	-4,018.84

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